

Amendments to the Claims:

The following listing of claims replaces all prior versions and listings of claims, in the application.

Listing of Claims

1. (Currently Amended) An endoscope comprising:
 - a fiber optic waveguide that transmits an image from a distal end to a proximal end, the fiber optic waveguide extending through a rigid endoscope body having an outer diameter of less than 3 mm;
 - a lens positioned at the distal end of the fiber optic waveguide;
 - a handle attached to the endoscope body;
 - an imaging device within the handle and optically coupled to the proximal end of the fiber optic waveguide; and
 - a removable sheath extending about the endoscope body ~~fiber optic waveguide~~, the sheath being removably attached to the handle and including an illumination channel.
2. (Original) The endoscope of claim 1 wherein the lens comprises a first lens element, a second lens element and an aperture stop.
3. (Currently Amended) The endoscope of claim 1 wherein the lens couples light at any position on a distal surface of the lens to a plurality of optical fibers of the fiber optic waveguide such that the numerical aperture of light entering each fiber from a position varies as a function of angle.
4. (Currently Amended) An endoscope comprising:
 - a fiber optic waveguide that transmits an image, the waveguide having a diameter of less than 2 millimeters;
 - an optical system coupled to a distal end of the waveguide;
 - a lens system optically coupled to a proximal end of the waveguide;

an imaging device that receives an image from the fiber optic waveguide;
and

a disposable sheath extending over the ~~optical waveguide~~ endoscope body,
the sheath being removably attached to the handle.

5. (Currently Amended) The endoscope of claim 4 wherein the fiber optic waveguide ~~is~~ comprises a plurality of optical fiber fibers.
6. (Original) The endoscope of claim 5 wherein the waveguide has at least 3000 imaging fibers.
7. (Original) The endoscope of claim 6 wherein the optical lens at the distal end of the waveguide is an achromatic lens system including an aperture stop.
8. (Original) The endoscope of claim 7 wherein the numerical aperture of the lens system is balanced to the imaging fibers.
9. (Original) The endoscope of claim 4 wherein the disposable sheath has a window over the distal end.
10. (Original) The endoscope of claim 4 wherein the disposable sheath has a lens at the distal end.
11. (Original) The endoscope of claim 4 wherein the optical system is non-telecentric and includes a first lens element, a second lens element and an aperture stop.
12. (Currently Amended) The endoscope of claim 4 wherein the disposable sheath includes an optical waveguide that transmits light to the distal end of the endoscope.

13. (Original) The endoscope of claim 4 further comprising an annular illumination channel encircling the optical waveguide fiber for transmitting the light and the sheath having a single sealed outer tube.
14. (Original) The endoscope of claim 6 wherein the disposable sheath has a tube for passing a tool to the distal end of the endoscope.
15. (Original) The endoscope of claim 4 further comprising a working channel.
16. (Original) The endoscope of claim 4 wherein the sheath comprises an illumination fiber optic system coupled to a light source through a handle.
17. (Currently Amended) The endoscope of claim 12 wherein the optical waveguide comprises an illumination fiber extending through the sheath is coupled to a light source with a connector.
18. (Original) The endoscope of claim 4 wherein the imaging device is connected to an image processor.
19. (New) An endoscope comprising:
 - a fiber optic waveguide having at least 3000 imaging optical fibers that transmit an image, the waveguide extending through a rigid endoscope body having a diameter of less than 3 millimeters;
 - an optical system coupled to a distal end of the waveguide;
 - a handle attached to the endoscope body;
 - a lens system within the handle and optically coupled to a proximal end of the waveguide;
 - an imaging device within the handle that receives an image through the lens system from the fiber optic waveguide; and
 - a removable sheath extending over the endoscope body, the sheath being removably attached to the handle with a connector.

20. (New) The endoscope of claim 19 wherein the optical system comprises an achromatic lens.